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The pycnidia occur on the diseased roots, and more abundantly on the lower part of the petioles and on the fruit, but rarely on the leaves. Cultures were obtained from hyphae invading the sound tissue of the roots and from spores. The colonies from both sources were similar, and many infection experiments with mycelium from both sources on sound roots were successful. The action of this species of *Phoma* in producing a scab and rotting of celery tubers is a case analogous to the well-known root rot of sugar beets caused by another species of the same genus, *Ph. Betae*.—H. HASSELBRING.

Treatment for smuts.—The usual methods of treating seed-grain for the prevention of smuts have not proved applicable in the case of the loose smuts of wheat and barley, since these fungi persist through the winter, not by means of spores adhering to the surface of the grain, but by means of a dormant mycelium in the interior of the seed. APPEL,¹⁴ following out the suggestion made by JENSEN at the time of the publication of his hot water treatment to use a preliminary treatment with cold water for seed infected with these smuts, has worked out a more definite method founded on an experimental basis. APPEL assumes that, like the spores of smuts, the dormant mycelium will start into growth more readily than the infected seed, and that the active mycelium will be killed at temperatures which do not injure the seed. The experiments substantiate this belief. It is found that grain infected with *Ustilago tritici* or *U. nuda* can be treated successfully by being soaked for six hours at 20–30° C., and by being treated subsequently with hot water at 50–54° C., or by hot air at a corresponding temperature.—H. HASSELBRING.

Dehiscence of anthers.—HANNIG¹⁵ takes up what apparently he regards as a real difference between STEINBRINCK'S cohesion theory and SCHNEIDER'S *Schrumpfungstheorie* for the explanation of the dehiscence of anthers. To the reviewer the two theories differ more in the degree of analysis than anything else, as he believes that this phenomenon must be in the last analysis found dependent upon the tensile strength of water. However, the author has done a real service in showing how the dehiscence is a genuine cohesion consequence. He has accomplished this by artificially causing dehiscence through the effect of dehydrating solutions. He has shown that dehiscence will occur in a saturated atmosphere if anthers are exposed to light which generates enough heat in the tissues to reduce the vapor tension sufficiently to set up tension in the water contained in the membranes. BURCK'S notion that the nectaries withdraw water from the membranes and hence cause dehiscence in a saturated atmosphere was not confirmed.—RAYMOND H. POND.

¹⁴ APPEL, OTTO, Theorie und Praxis der Bekämpfung von *Ustilago tritici* und *Ustilago nuda*. Ber. Deutsch. Bot. Gesell. 27:606–610. 1910.

¹⁵ HANNIG, E., Ueber den Öffnungsmechanismus der Antheren. Jahrb. Wiss. Bot. 47:186–218. 1909.